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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/422,539      | 10/21/1999  | DING-KAI CHEN        | 10981786-1          | 5676             |

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EXAMINER

KENDALL, CHUCK O

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2122

DATE MAILED: 04/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/422,539

Applicant(s)

CHEN ET AL.

Examiner

Chuck O Kendall

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-45 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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### DETAILED ACTION

This Office Action is the response to the communication received on February 10, 2003 Amendment under 37 CFR § 1.111. Reconsideration of the instant application is requested by applicants. All such supporting documentation has been placed of record in the file. Claims 23-45 are pending in this application.

### Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Saulsbury et al. USPN 6,314,510 and further in view of Adl-Tabatabai et al. USPN 6,317,869 B1 hereinafter Adl.

Regarding claim 23, a method for passing information to a post-compile-time software application comprising:

compiling a plurality of blocks of code (Adl, fig 1, 12);

finding one or more unused bits in an instruction in one of the plurality of blocks of code that are compiled (Adl, fig 5c, see inspect bit vectors); and

using the one or more unused bits to pass information to the post compile-time software application (Adl, fig 5c, 590, see set bits and garbage collection for passing information, and for post compile time see program execution).

Regarding claim 24, the method of claim 23, wherein the information identifies whether certain registers are live (Hayashi, 5:45-50).

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Regarding claim 25, the method of claim 23, wherein the post-compile-time software application comprises a dynamic optimizer (Adl, fig1, 14).

Regarding claim 26, the method of claim 23, wherein the instruction is a no-operation (NOP) instruction (Hayashi, see Fig 22, for NOP instruction, and live register within block of code

Regarding claim 27 the method of claim 23, further comprising;

using the information by the post-compile-time software application to determine whether certain registers are live(2:23-27, see live objects and Garbage collection).

Regarding claim 28, the method of claim 23, wherein the information is encoded as a bit vector (2:23-30, see marking set bits).

Regarding claim 29 the method of claim 23, wherein using the one or more unused bits to pass information to the post-compile-time software application comprises:

determining which of a plurality of registers are live in said one of the plurality of blocks of code (Hayashi, 5:45-50);

creating within the instruction a register-usage bit-vector having a plurality of register-usage bits; and [5:40-55, see register usage field and setting bit vectors, see Kill or use as indicated by 1 or 0 for bit vectors in the register information management table as cited from prior art]

setting one of the plurality of register-usage bits for each one of the plurality of registers that are live [Hayashi,5:40-55].

Regarding claim 30 see claim 23 for reasoning.

Regarding claim 31, see claim 24 for reasoning.

Regarding claim 32, see claim 25 for reasoning.

Regarding claim 33, see claim 26 for reasoning.

Regarding claim 34, see claim 27 for reasoning.

Regarding claim 35, see claim 28 for reasoning.

Regarding claim 36, see claim 23 for reasoning.

Regarding claim 37, see claim 24 for reasoning.

Regarding claim 38, see claim 25 for reasoning.

Regarding claim 39, see claim 26 for reasoning.

Regarding claim 40, see claim 23 for reasoning.

Regarding claim 41, see claim 24 for reasoning.

Regarding claim 42, see claim 25 for reasoning.

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Regarding claim 43, see claim 26 for reasoning.

Regarding claim 44, see claim 27 for reasoning.

Regarding claim 45, see claim 28 for reasoning.

### Response to Arguments

Examiner has evaluated applicant's arguments of February, 10 2002 correspondence, which has been fully considered but is moot in view of new grounds of rejection.

### Correspondence Information

Any inquires concerning this communication or earlier communications from the examiner should be directed to Chuck O. Kendall who may be reached via telephone at (703) 308-6608. The examiner can normally be reached Monday through Friday between 8:00 A.M. and 5:00 P.M. est.

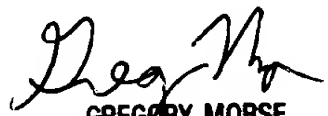
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *Greg Morse* can be reached at (703) 308-4789.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

*For facsimile (fax) send to 703-7467239 official and 703-7467240 draft*

*Chuck O. Kendall*

**Software Engineer Patent Examiner**  
**United States Department of Commerce**

  
**GREGORY MORSE**  
**SUPERVISORY PATENT EXAMINER**  
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